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FOREST PEST MANAGEMENT

DWARF MISTLETOE PROGRAM
PLANNING FOR THE
ROCKY MOUNTAIN REGION
1990-1994



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Forest Pest Management
Denver, Colorado

DWARF MISTLETOE PROGRAM
PLANNING FOR THE
ROCKY MOUNTAIN REGION
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by

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Dwarf Mistletoe Program Planning for the Rocky Mountain Region - 1990-94

Introduction

Dwarf mistletoe program activities in the Rocky Mountain Region have been summarized by Johnson (1986, 1987). These reports included accomplishments funded by the USDA Forest Service, Forest Pest Management (FPM) from 1970-1989. Table 1 includes an update of previously published information. These summaries only include projects in which FPM was directly involved. Many more acres of control have been accomplished through timber harvests and other stand entries, however, we have no record of the acres treated.

The purpose of this report is to define the needs for additional survey and suppression activities for the next five years (1990-1994). This will be helpful in formulating and supporting continued program funding and will put into focus the needs of the Forests and Ranger Districts. Summary tables that include all Forests and needs by fiscal year are presented in Tables 2 and 3. This listing is a compilation of Forest-generated requests for funding. Although additional Forests in the Region have dwarf mistletoe infested stands, they have not participated in this program. Final funding and allocation of target acres may be adjusted according to the availability of funds, supporting biological evaluations and cost-effectiveness of each project. This listing only includes FPM funds. In many cases other sources of funds are programmed in cooperative resource projects.

Specific guidelines and the use of FPM funds for dwarf mistletoe projects and available silvicultural practices are contained in FSM 3430, FSH 3409.11, Chapter 62.1, and R-2 FSH 6/83 Amendment 2 in Chapter 30 of the Silvicultural Practice Handbook.

The remaining tables (Tables 4-10) contain specific funding requests by fiscal year for each Forest where dwarf mistletoes have been recognized as a management concern. The majority of the projects are concerned with control of lodgepole pine dwarf mistletoe (Arceuthobium americanum) in timber emphasis areas and high value recreation sites. Some control of ponderosa pine and Douglas-fir dwarf mistletoes (A. vaginatum subsp. cryptopodum and A. douglasii) respectively, are planned along the Front Range Forests of Colorado. Presuppression surveys and suppression activities (overstory removal, sanitation-thinning, stand replacement, and barrier treatment) are included.

Dwarf mistletoe program accomplishments (1979-89)

Previous surveys have indicated that approximately half of the lodgepole pine type in the Rocky Mountain Region National Forests is infested with dwarf mistletoe (Johnson et al 1978, 1979, 1980). It is estimated that more than 842,000 acres are infested within the Region (Table 1).

During the past 10 years, 221,966 acres have been surveyed and 36,794 acres treated using FPM funds (Table 1). These figures indicate that approximately 28 percent of the infested type has been surveyed, but less than 5 percent of this area has received treatments (Table 1). A tremendous amount of work must be accomplished if we desire to convert these stands to full productivity.

Table 1. Acres of lodgepole pine type infested with dwarf mistletoe listed by National Forest and suppression program accomplishments (1979-89) 1/.

Forest	Acres infested <u>2/</u>	% total <u>3/</u>	Acres surveyed	% total <u>4/</u>	Acres treated	% total
Arapaho/Roosevelt	220,900	26.2	82,675	37.4	11,436	5.2
Bighorn	51,000	6.1	0	--	0	--
Grand Mesa/ Uncompahgre/ Gunnison	77,200	9.2	17,693	22.9	3,678	4.8
Medicine Bow	193,000	22.9	37,498	19.4	11,543	5.9
Pike/San Isabel	76,600	9.1	40,955	53.5	908	1.2
Routt	90,500	10.1	24,525	27.1	3,461	3.8
Shoshone	81,000	9.6	8,392	10.4	3,031	3.7
White River	52,200	6.2	10,228	19.6	2,737	3.4
Totals	842,400	100.0	221,966	28.0	36,794	4.6

1/ Data for FPM funded program only.

2/ Acres infested from surveys conducted in 1978 and 1979 (Johnson, Hawksworth, and Drummond 1978, 1979, 1980).

3/ Percent of infested acres of Regional total.

4/ Percent of acres infested for Forest.

Dwarf mistletoe program plans (1990-94)

Table 2. Summary of dwarf mistletoe program funding needs (rounded to nearest \$100.) and targets for all Forests listed by fiscal year (1990-94).

Fiscal year	FPM \$	Survey acres	Treatment acres
1990	192,100 <u>1/</u>	14,484	2,684
1991	253,700	11,411	3,081
1992	201,500	9,755	2,322
1993	275,000	12,121	2,862
1994	269,200	10,619	2,700
Totals	1,191,500	58,390	13,649

1/ Includes \$31,452 of carryover funds from FY'89.

Table 3. Summary of dwarf mistletoe program funding needs (rounded to nearest \$100.) and targets listed by National Forest for the next five years (1990-94).

Forest	FPM \$	Survey acres	Treatment acres
Arapaho/Roosevelt	174,800	11,700	2,666
Grand Mesa/Uncompahgre/ Gunnison	110,300	3,750	1,400
Medicine Bow	251,100	10,600	3,320
Pike/San Isabel	246,900	7,743	2,546
Routt	131,000	13,400	1,703
Shoshone	86,900	6,000	570
White River	190,500	5,197	1,444
Totals	1,191,500	58,390	13,649

Table 4. Arapaho and Roosevelt National Forests dwarf mistletoe program funding needs and targets (1990-94).

Fiscal year	FPM \$	Survey acres	Treatment acres
1990	32,460	3,100	670
1991	30,340	2,400	506
1992	33,471	3,000	440
1993	42,652	2,500	570
1994	35,847	700	480
Totals	174,770	11,700	2,666

Table 5. Grand Mesa, Uncompahgre, and Gunnison National Forests dwarf mistletoe program funding needs and targets (1990-94).

Fiscal year	FPM \$	Survey acres	Treatment acres
1990	17,000	0	200
1991	22,800	500	300
1992	24,000	1,250	300
1993	23,000	1,000	300
1994	23,500	1,000	300
Totals	110,300	3,750	1,400

Table 6. Medicine Bow National Forest dwarf mistletoe program funding needs and targets (1990-94).

Fiscal year	FPM \$	Survey acres	Treatment acres
1990	34,800	600	550
1991	64,740	0	1,079
1992	35,460	0	591
1993	56,970	5,000	550
1994	59,100	5,000	550
Totals	251,070	10,600	3,320

Table 7. Pike and San Isabel National Forests dwarf mistletoe program funding needs and targets (1990-94).

Fiscal year	FPM \$	Survey acres	Treatment acres
1990	35,175	2,604	344
1991	48,775	3,698	490
1992	38,840	811	400
1993	67,795	10	725
1994	56,310	620	587
Totals	246,895	7,743	2,546

Table 8. Routt National Forest dwarf mistletoe program funding needs and targets (1990-94).

Fiscal year	FPM \$	Survey acres	Treatment acres
1990	29,225 <u>1/</u>	7,000 <u>1/</u>	500 <u>1/</u>
1991	41,200	1,500	416
1992	11,200	1,600	197
1993	22,500	1,800	272
1994	26,800	1,500	318
Totals	130,925	13,400	1,703

1/ Carryover funds and targets from FY'89.

Table 9. Shoshone National Forest dwarf mistletoe program funding needs and targets (1990-94).

Fiscal year	FPM \$	Survey acres	Treatment acres
1990	900 <u>1/</u>	0	10 <u>1/</u>
1991	24,000	2,000	140
1992	24,000	2,000	140
1993	19,000	1,000	140
1994	19,000	1,000	140
Totals	86,900	6,000	570

1/ Carryover funds and targets from FY'89.

Table 10. White River National Forest dwarf mistletoe program funding needs and targets (1990-94).

Fiscal year	FPM \$	Survey acres	Treatment acres
1990	42,527 <u>1/</u>	1,180 <u>1/</u>	410
1991	21,800	1,313	150
1992	34,500	1,094	254
1993	43,000	811	305
1994	48,600	799	325
Totals	190,427	5,197	1,444

1/ Includes \$1,327 of carryover funds from FY'89 and 500 acres of survey.

Recommendations for the future

It is essential that future harvesting activities be directed at preventative measures for dwarf mistletoe control. It is much more efficient to prevent mistletoe from becoming established in newly regenerated stands than to treat or replace severely infested mature stands. Suppression activities should be included in the postharvest and regeneration phases of stand management and practiced as a part of normal stand management. Decreased reliance on FPM funds will result from these practices. Specific recommendations for future programs include the following:

1. Encourage Forests to complete site-specific dwarf mistletoe plans based on existing presuppression survey data and other inventory data.
2. Insure that contract specifications for felling non-merchantable infected trees be followed in timber sales.
3. Treat infested stands bordering sanitized stands. Prevent reinvasion of regenerated clearcuts from adjacent untreated stands.
4. Treat infested stands through planned sales, other stand entries whenever possible.
5. Emphasize control of the disease at final harvest and site preparation and ensure that infection is eliminated in regenerated stands.

6. Coordinate vegetation management plans with recreation, wildlife and other resource specialists to insure that Forest Plan objectives are met for projects. Also seek out funding for multiple resource benefiting projects from all available sources.
7. Improve the health and longevity of trees in high value developed sites that are infested with dwarf mistletoes through the development of site-specific vegetation management plans and projects.
8. Continue training programs that emphasize integration of forest pest management and good silviculture as the least-cost, most effective control of forest pests.

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